

IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF NEBRASKA

GROVER KING,

Plaintiff,

vs.

UNION PACIFIC RAILROAD COMPANY,

Defendant.

**8:18CV79**

**MEMORANDUM and ORDER**

This matter is before the Court on defendant Union Pacific Railroad Company's ("U.P." and "the Railroad") motions in limine, [Filing No. 32](#) and 34, and motion for summary judgment, [Filing No. 36](#). This is an action under the Federal Employers' Liability Act ("FELA"), [45 U.S.C. § 51 et seq.](#) The plaintiff worked as a laborer, machine operator, foreman, and assistant roadmaster at U.P. and/or its predecessor-in-interest from 1972 to 1988. He alleges that while he was employed by the Railroad, he was negligently exposed to various toxic substances and carcinogens including diesel fuel/exhaust, benzene, creosote, and herbicides that contributed to his development of multiple myeloma.

I. BACKGROUND

U.P.'s motion for summary judgment is based on the contention that summary judgment is warranted if the Court excludes the testimony of either of the plaintiff's expert witnesses. It argues that without the expert testimony, King cannot establish medical causation and will be unable to prove that the Railroad is liable under the FELA.

U.P. moves in limine to exclude the testimony of Dr. Ernest Chiodo and Dr. R. Leonard Vance, under [\*Daubert v. Merrell Dow Pharm., Inc.\*, 509 U.S. 579 \(1993\)](#). U.P.

does not challenge the experts' qualifications. It contends, however, that Dr. Chiodo's testimony on general causation is not supported by scientific literature or a reliable methodology, arguing that the studies on which he relies do not demonstrate a causal link between diesel exhaust, benzene, or herbicides, and multiple myeloma. The Railroad further contends that Dr. Chiodo did not employ a reliable methodology to establish that King's railroad occupations or his alleged exposures did in fact cause King's multiple myeloma (specific causation), in that Dr. Chiodo did not rule out other potential independent causes, and did not testify as to any threshold amount of exposure to these substances that is capable of causing cancer. U.P. argues that Dr. Vance similarly did not employ a scientifically reliable method to determine the levels of the plaintiff's exposure. It argues that Dr. Vance's opinions are nothing more than speculation based on King's recollection of his work environment from more than 30 years earlier. In support of its *Daubert* motions, U.P. submits several scientific journal articles. See Filing No. 38-7-14.

The plaintiff argues that the defendant's *Daubert* challenges go to the weight, not the admissibility, of the evidence.

## II. FACTS

For purposes of the motion for summary judgment, the parties agree to the following facts. King began his railroad employment in 1972. He resigned from Union Pacific in 1988. King was diagnosed with multiple myeloma in 2015. He sued Union Pacific under the FELA, alleging that his multiple myeloma was caused by exposure to various "toxic substances" during his railroad employment. The plaintiff identified Dr. Chiodo as his medical causation expert who will testify on general and specific

causation of King's injuries. Dr. Chiodo's opinions on the causation of King's multiple myeloma are limited to the following alleged exposures from his railroad employment: (1) diesel exhaust; (2) benzene, as a component of diesel exhaust; (3) creosote; and (4) herbicides. King is still living and was deposed in this case on August 16, 2019.

The plaintiff identified Dr. Vance as his liability expert to testify as to "notice and foreseeability of the hazards associated with the Plaintiff's crafts, including exposure to carcinogens and the railroad industry's knowledge of the hazards of exposure to toxins." [Filing No. 38-2](#), Plaintiff's Expert Disclosures at 1. Dr. Vance has no knowledge regarding the type and composition of herbicide or solvents to which King was exposed. Dr. Vance acknowledges that the content of benzene in gasoline, diesel fuel, and creosote varies, depending on the diesel fuel used, type of engine, engine maintenance, and exhaust gas treatment. He does not know the type of gasoline or brand of creosote or diesel fuel to which King was exposed.

Dr. Vance did not use any standardized questionnaire for determining King's workplace exposures, did not perform any mathematical modeling to determine King's likely exposures, did not obtain an analysis of King's chemical exposures from his bodily fluids or tissues, and did not interview King's coworkers. Dr. Vance relied on King's account in analyzing King's exposures and assessed them in light of his review of the literature in the industrial hygiene field. Dr. Vance testified that he could not quantify King's benzene exposure. See [Filing No. 37](#), Defendant's Brief at 2-4, Statement of Undisputed Material Facts; [Filing No. 45](#), Plaintiff's Brief at 2-4, Response to Statement of Undisputed Material Facts.

The record shows Dr. Vance has bachelor's degree in chemistry from Virginia Tech, a Ph.D. in chemistry from the University of Virginia, and a J.D. from the University of Richmond. [Filing No. 44-2](#), Ex. 1, Dr. Vance Curriculum Vitae ("C.V."). He was employed as Director of Health Standards at the United States Occupational Safety and Health Administration from 1982 to 1986 and supervised preparation of numerous OSHA chemical exposure standards, including the 1985 OSHA Hazard Communication Standard. [Filing No. 44-2](#), Ex. 3, Dr. Vance Report at 2. He represented the U.S. Department of Labor on several federal task forces and testified before Congress on chemical exposure issues for the U. S. Department of Labor. *Id.* He has worked in occupational and environmental health and safety for forty years and has taught occupational and environmental health and safety at Virginia Commonwealth University since 1986. *Id.*; see also *id.*, Ex. 1, Dr. Vance C.V. Dr. Vance also served as an Assistant Attorney General in Virginia for six years where he handled environmental and public health litigation. [Filing No. 44-2](#), Ex. 1, Dr. Vance C.V. at 3.

In this case, Dr. Vance was asked to offer opinions relating to the exposure of Grover King to toxic substances during his career with the Union Pacific Railroad Company and its predecessor on King's working conditions. [Filing No. 44-2](#), Ex. 3, Dr. Vance Report at 1. Dr. Vance interviewed King and reviewed the complaint, some of the discovery materials, and U.P. air monitoring data. *Id.* He also reviewed various peer-reviewed journal articles, standard textbooks, and other authorities and documents, including Association of American Railroads (AAR) Proceedings of Meetings; the March 14, 2008, Federal Register notice of EPA's revised rule on Control of Emissions from Locomotives, OSHA, EPA, NIOSH, HHS, and IARC documents, and

the 1996 AAR *Locomotive Crashworthiness and Cab Working Conditions* Report to Congress. *Id.*; see also [Filing No. 44-2](#), Ex. 4, Deposition of Dr. R. Leonard Vance ("Dr. Vance Dep.") at 10-15.

He stated he relied on U.P. air monitoring data only "in that my opinion is that air monitoring was never done for the purpose of determining King's exposure, that's based upon his statement to me, and the air monitoring data that I examined was all monitoring that took place subsequent to the time that he retired." [Filing No. 44-2](#), Ex. 2, Dr. Vance Dep. at 58. He also stated that "the railroad knew, from 1935 at least on, that air monitoring was a technique and tool that could be used in order to protect workers; but that, with respect to what King was doing, it wasn't done during the time that he worked from 1972 to 1988." *Id.* at 96. He also testified that other railroad industries were performing air monitoring studies during the time King worked for the Railroad. *Id.* at 59. In his report, Dr. Vance notes that the railroad industry has been aware of the risk and potential harm to employees exposed to diesel exhaust since at least 1955. [Filing No. 44-2](#), Ex. 3, Dr. Vance Report at 4.

Dr. Vance states that King has "a history of railroad exposure to gasoline, diesel fuel, diesel exhaust, degreasing solvents, creosote, benzene, and herbicides." [Filing No. 44-2](#), Ex. 3, Dr. Vance Report at 1. Dr. Vance opined that the Railroad was negligent in that it failed to: provide air monitoring to determine King's level of exposure to toxic chemicals; provide appropriate protective clothing and respiratory protection to King; provide appropriate and effective warnings, training, and hazard information to King; comply with the OSHA General Duty Clause, § 5(a)(1) of the Occupational Safety & Health Act; comply with the OSHA Hazard Communication Standard; and failed to

employ work practices and use administrative controls that could have protected King. *Id.* at 10. He concluded that the Railroad failed to provide King with a reasonably safe place to work. *Id.* at p. 10. Dr. Vance testified that he based his opinion on King's description of exposures and on his own "familiarity with the materials that were provided in discovery in this and other cases and discussions that I have had with trackmen over the last 32 years, reviewing materials and discovery that was provided by railroad industrial hygienists in litigation concerning trackmen exposures over the last 32 years." [Filing No. 38-15](#), Ex. 15, Dr. Vance Dep. at 55-56.

The record shows that Dr. Ernest Chiodo received an M.D. degree and a J.D. degree from Wayne State University. [Filing No. 42-1](#), Ex. 1, Dr. Chiodo C.V. at 2. He also has a master's degree in Public Health from Harvard University School of Public Health, a master's degree in Biomedical Engineering from Wayne State University College of Engineering and School of Medicine, a Master of Science degree in Threat Response Management from the University of Chicago, and a Master of Science degree in Occupational and Environmental Health Sciences with a specialization in Industrial Toxicology from Wayne State University. *Id.* at 1-2. He has also obtained an M.B.A. from the University of Chicago and a Master of Science in Evidence-Based Health Care from the University of Oxford. *Id.* Dr. Chiodo is board certified in internal medicine, preventative medicine in occupational medicine, preventative medicine in public health, and is a toxicologist and certified industrial hygienist. *Id.* at 5. He is licensed to practice as a physician in Michigan, Illinois, Florida, and New York. *Id.* at 4. Dr. Chiodo has had numerous professorships and faculty appointments at Wayne State

University, Wayne State University School of Medicine, Loyola University Chicago Law School, and John Marshall Law School. *Id.* at 6.

Dr. Chiodo interviewed the plaintiff and reviewed the answer to the complaint, answers to interrogatories, and medical bills and records. See [Filing No. 42-1](#), Ex. 2, Dr. Chiodo Report at 2-3. Dr. Chiodo testified that he did not rely on Dr. Vance's industrial hygiene report to form his opinion but relied on his own industrial hygiene knowledge and experience. See [Filing No. 42-1](#), Ex. 3, Deposition of Dr. Ernest Chiodo ("Dr. Chiodo Dep.") at 16. Dr. Chiodo also relied on peer-reviewed literature in formulating his expert opinion that King's long and intense exposure to agents known to cause multiple myeloma, including diesel exhaust, its subcomponent benzene, herbicides, and creosote during the course of his railroad employment was a significant contributing factor in King's development of multiple myeloma. [Filing No. 42-1](#), Ex. 2, Dr. Chiodo Report at 10.

Dr. Chiodo described his methodology as consistent with that set out in the Federal Judicial Center's reference manual.<sup>1</sup> [Filing No. 42-1](#), Ex. 3, Dr. Chiodo Dep. at 55-56. He testified he considered King's exposures and performed a differential diagnosis in rendering his opinion. *Id.* at 56-57. In doing so, he was not able to rule out age, gender, genetics, and smoking as contributing causes of King's multiple myeloma. *Id.* at 57, 60. Exposures to diesel exhaust, benzene, creosote and herbicides, loosely characterized as "railroad work," similarly could not be ruled out as causing an increased risk of multiple myeloma. *Id.* at 58. He was, however, specifically able to "rule out" a one-time exposure that King had to formaldehyde as a contributing factor to

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<sup>1</sup> Federal Judicial Center, *Reference Manual on Scientific Evidence* ("Reference Manual") at 25, 613, 689-91 (2d ed. 2000).

his multiple myeloma. *Id.* at 9, 20. He testified that there was no safe threshold of exposure to the toxins at issue, stating, “[t]here are no thresholds that somebody can point to and say this level would not cause it.” *Id.* at 43; see also *id.* at 10, 20, 37. Dr. Chiodo declined to apportion between the various causes, stating that that “each could be a sole cause or there could be a combination of them that are the causes of the actual causes of Mr. King's [multiple myeloma].” *Id.* at 61. He stated the apportionment was a task for the jury in an FELA case. *Id.* at 14, 58.

### III. LAW

#### A. Summary Judgment

Summary judgment is appropriate when, viewing the facts and inferences in the light most favorable to the nonmoving party, “the pleadings, the discovery and disclosure materials on file, and any affidavits show that there is no genuine issue as to any material fact and that the movant is entitled to judgment as a matter of law.” Fed. R. Civ. P. 56(c); see also *Celotex Corp. v. Catrett*, 477 U.S. 317, 322 (1986). “The movant ‘bears the initial responsibility of informing the district court of the basis for its motion, and must identify ‘those portions of [the record] . . . which it believes demonstrate the absence of a genuine issue of material fact.’” *Torgerson v. City of Rochester*, 643 F.3d 1031, 1042, (8th Cir. 2011) (*en banc*) (quoting *Celotex*, 477 U.S. at 323). If the movant does so, “the nonmovant must respond by submitting evidentiary materials that set out ‘specific facts showing that there is a genuine issue for trial.’” *Id.* (quoting *Celotex*, 477 U.S. at 324).

The evidence must be viewed in the light most favorable to the nonmoving party, giving the nonmoving party the benefit of all reasonable inferences. *Kenney v. Swift*

*Transp., Inc.*, 347 F.3d 1041, 1044 (8th Cir. 2003). If “reasonable minds could differ as to the import of the evidence,” summary judgment should not be granted. *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 251 (1986). “In ruling on a motion for summary judgment, a court must not weigh evidence or make credibility determinations.” *Id.*

#### B. Expert Testimony

Federal Rule of Evidence 702 governs the admissibility of expert testimony and requires that: “(1) the evidence must be based on scientific, technical or other specialized knowledge that is useful to the finder of fact in deciding the ultimate issue of fact; (2) the witness must have sufficient expertise to assist the trier of fact; and (3) the evidence must be reliable or trustworthy.” *Kudabeck v. Kroger Co.*, 338 F.3d 856, 859 (8th Cir. 2003). When faced with a proffer of expert testimony, trial judges are charged with the “gatekeeping” responsibility of ensuring that all expert evidence admitted is both relevant and reliable. *Kumho Tire Co. v. Carmichael*, 526 U.S. 137, 147 (1999); *Daubert*, 509 U.S. at 589. The proponent of expert testimony bears the burden of providing admissibility by a preponderance of the evidence. *Lauzon v. Senco Prods.*, 270 F.3d 681, 686 (8th Cir. 2001).

Testimony is relevant if it is “sufficiently tied to the facts of the case that it will aid the jury in resolving a factual dispute.” *Daubert*, 509 U.S. at 591. Expert testimony assists the trier of fact when it provides information beyond the common knowledge of the trier of fact. *Kudabeck*, 338 F.3d at 860.

To satisfy the reliability requirement, the party offering the expert testimony must show by a preponderance of the evidence “that the methodology underlying [the expert’s] conclusions is scientifically valid.” *Barrett v. Rhodia, Inc.*, 606 F.3d 975, 980

(8th Cir. 2010) (citations omitted). In making the reliability determination, the court may consider:

- (1) whether the theory or technique can be or has been tested; (2) whether the theory or technique has been subjected to peer review or publication; (3) whether the theory or technique has a known or potential error rate and standards controlling the technique's operations; and (4) whether the theory or technique is generally accepted in the scientific community.

*Russell v. Whirlpool Corp.*, 702 F.3d 450, 456 (8th Cir. 2012). Additional factors to consider include: “whether the expertise was developed for litigation or naturally flowed from the expert’s research; whether the proposed expert ruled out other alternative explanations; and whether the proposed expert sufficiently connected the proposed testimony with the facts of the case.” *Polski v. Quigley Corp.*, 538 F.3d 836, 839 (8th Cir. 2008) (quoting *Sappington v. Skyjack, Inc.*, 512 F.3d 440, 449 (8th Cir. 2008)). “This evidentiary inquiry is meant to be flexible and fact specific, and a court should use, adapt, or reject” these factors as the particular case demands. *Russell v. Whirlpool*, 702 F.3d at 456 (citation omitted).

When making the reliability inquiry, the court should focus on “principles and methodology, not on the conclusions that they generate.” *Kuhn v. Wyeth, Inc.*, 686 F.3d 618, 625 (8th Cir. 2012). However, “conclusions and methodology are not entirely distinct from one another. Trained experts commonly extrapolate from existing data.” *Gen. Elec. Co. v. Joiner*, 522 U.S. 136, 146 (1997). “When the application of a scientific methodology is challenged as unreliable under *Daubert* and the methodology itself is sufficiently reliable, outright exclusion of the evidence is warranted only if the methodology ‘was so altered by a deficient application as to skew the methodology itself.’” *United States v. Gipson*, 383 F.3d 689, 697 (8th Cir. 2004) (emphasis in

original) (quoting *United States v. Martinez*, 3 F.3d 1191, 1198 (8th Cir. 1993)). Generally, deficiencies in application go to the weight of the evidence, not its admissibility. See *id.* “As a general rule, the factual basis of an expert opinion goes to the credibility of the testimony, not the admissibility, and it is up to the opposing party to examine the factual basis for the opinion in cross-examination.” *Bonner v. ISP Techs., Inc.*, 259 F.3d 924, 929 (8th Cir. 2001) (quoting *Hose v. Chicago Nw. Transp. Co.*, 70 F.3d 968, 976 (8th Cir. 1995)). “Vigorous cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof are the traditional and appropriate means of attacking shaky but admissible evidence.” *Daubert*, 509 U.S. at 596.

“[C]ases are legion” in the Eighth Circuit that “call for the liberal admission of expert testimony.” *Johnson v. Mead Johnson & Co.*, 754 F.3d 557, 562 (8th Cir. 2014). “As long as the expert’s scientific testimony rests upon ‘good grounds, based on what is known’ it should be tested by the adversary process with competing expert testimony and cross-examination, rather than excluded by the court at the outset.” *Id.* (quoting *Daubert*, 509 U.S. at 590).

District courts are “not to weigh or assess the correctness of competing expert opinions.” *Id.* The jury, not the trial court, should be the one to ‘decide among the conflicting views of different experts.’” *Kumho Tire Co.*, 526 U.S. at 153. Medical experts often disagree on diagnosis and causation and questions of conflicting evidence must be left for the jury’s determination. *Hose*, 70 F.3d at 976.

### C. The FELA

Railroads are liable in damages for an employee's "injury or death resulting in whole or in part from the Railroad's negligence." 45 U.S.C. § 51. Appraising negligence under FELA "turns on principles of common law . . . , subject to such qualifications [that] Congress" introduces. *Consolidated Rail Corp. v. Gottshall*, 512 U.S. 532, 543-44 (1994) (noting the qualifications are the modification or abrogation of several common-law defenses to liability, including contributory negligence and assumption of risk). The FELA is to be liberally construed, but it is not a workers' compensation statute, and the basis of liability is "negligence, not the fact that injuries occur." *Id.* at 543.

The FELA imposes upon employers a continuous duty to provide a reasonably safe place to work. *Cowden v. BNSF Ry. Co.*, 690 F.3d 884, 889 (8th Cir. 2012). The railroad's duty to provide a safe workplace is a duty of reasonable care. *CSX Transp., Inc. v. McBride*, 564 U.S. 685, 703 (2011). However, "a relaxed standard of causation applies under FELA." *Gottshall*, 512 U.S. at 543; see *Holloway v. Union Pac. R.R. Co.*, 762 F. App'x 350, 352 (8th Cir. 2019). The test is simply whether the railroad's negligence played a part—no matter how small—in bringing about the injury. *McBride*, 564 U.S. at 705; see also *Paul v. Mo. Pac. R.R. Co.*, 963 F.2d 1058, 1061 (8th Cir. 1992)(stating that "[u]nder FELA, the plaintiff carries only a slight burden on causation."). In FELA cases, the negligence of the defendant need not be the sole

cause or whole cause of the plaintiff's injuries.<sup>2</sup> *Claar v. Burlington N. R.R. Co.*, 29 F.3d 499, 503 (9th Cir. 1994).

Despite the lower causation standard under FELA, a plaintiff must still demonstrate some causal connection between a defendant's negligence and his or her injuries. *Brooks v. Union Pac. R.R. Co.*, 620 F.3d 896, 899 (8th Cir. 2010). In order to avoid summary judgment, a FELA plaintiff is required to produce admissible evidence that the railroad's negligence played a part in causing his alleged injury. *Id.* If an injury has "no obvious origin, 'expert testimony is necessary to establish even that small quantum of causation required by FELA.'" *Brooks*, 620 F.3d at 899 (quoting *Claar*, 29 F.3d at 504); see also *Mayhew v. Bell S.S. Co.*, 917 F.2d 961, 963 (6th Cir. 1990) ("[A]lthough a[n FELA] plaintiff need not make a showing that the employer's negligence was the sole cause, there must be a sufficient showing (i.e. more than a possibility) that a causal relation existed.").

"The standard of causation under FELA and the standards for admission of expert testimony under the Federal Rules of Evidence are distinct issues and do not affect one another." *Claar*, 29 F.3d at 503. *Daubert's* standards for determining the admissibility of expert testimony apply regardless of whether the plaintiff's burden to prove causation is reduced. *Wills v. Amerada Hess Corp.*, 379 F.3d 32, 47 (2d Cir. 2004) (involving Jones Act and stating that "the standards for determining the reliability and credibility of expert testimony are not altered merely because the burden of proof is relaxed"); see also *Taylor v. Consol. Rail Corp.*, No. 96-3579, 114 F.3d 1189 (Table),

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<sup>2</sup> In contrast, "[t]o establish causation in a common law negligence action, a plaintiff generally must show that the defendant's conduct was a 'substantial factor in bringing about the harm.'" *Tufariello v. Long Island R.R. Co.*, 458 F.3d 80, 87 (2d Cir. 2006) (quoting Restatement 2d of Torts § 431(a)).

1997 WL 321142, at \*6–7 (6th Cir. June 11, 1997) (noting it is well established that the admissibility of expert testimony is controlled by *Daubert*, even in FELA cases); *Hose*, 70 F.3d at 976 (applying *Daubert* in an FELA case).<sup>3</sup>

A differential diagnosis is “an alternative method of establishing causation” that may be utilized where the particular facts of the case do not lend themselves to quantitative analysis.<sup>4</sup> *Hardyman v. Norfolk & W. Ry. Co.*, 243 F.3d 255, 261 (6th Cir. 2001) (rejecting defendant railroad’s argument that the only way the plaintiff could establish causation would be with the proffer of a known “dose/response relationship” or “threshold phenomenon[,]”). “In performing a differential diagnosis, a physician begins by ‘ruling in’ all scientifically plausible causes of the plaintiff’s injury. The physician then ‘rules out’ the least plausible causes of injury until the most likely cause remains.” *Glastetter v. Novartis Pharm. Corp.*, 252 F.3d 986, 989 (8th Cir. 2001) (involving state-law products liability action and finding an FDA decision to remove a drug from marketplace was “unreliable proof of medical causation . . . because the FDA employs a reduced standard (vis-à-vis tort liability)” of proof on causation).

In the Eighth Circuit, differential diagnoses in general pass muster under the four considerations identified in *Daubert*. *Johnson*, 754 F.3d at 564 (agreeing with other circuits that a differential diagnosis is a tested methodology, has been subjected to peer

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<sup>3</sup> That is not to say that the lower standard of proof has no effect on a *Daubert* inquiry. *Daubert*’s relevancy inquiry (that is, whether the evidence assists the trier of fact) may be affected by the reduced statutory burden of proof. *Wills*, 379 F.3d at 47; see *Daubert v. Merrell Dow Pharms., Inc.*, 43 F.3d 1311, 1321 (9th Cir. 1995) (on remand from the Supreme Court) (stating that where the pertinent inquiry is whether the proffered expert testimony “will assist the trier of fact” in determining causation, the court looks to the governing substantive standard).

<sup>4</sup> Differential diagnosis refers to a physician’s “determination of which one of two or more diseases or conditions a patient is suffering from, by systematically comparing and contrasting their clinical findings.” *King v. Burlington N. Santa Fe Ry. Co.*, 762 N.W.2d 24, 49 (Neb. 2009). “In contrast, etiology refers to determining the causes of a disease or disorder.” *Id.* at 49-50.

review/publication, does not frequently lead to incorrect results, and is generally accepted in the medical community). In fact, the Eighth Circuit has “termed an opinion [based on a differential diagnosis] ‘presumptively admissible,’ noting that a district court may not exclude such expert testimony unless the diagnoses are ‘scientifically invalid.’”

*Id.* Also, the Eighth Circuit has “consistently ruled that experts are not required to rule out all possible causes when performing the differential etiology analysis.” *Id.* at 563. In the context of the FELA, a plaintiff need not necessarily prove the levels of a toxin to which he or she was exposed.<sup>5</sup> See *Hardyman*, 243 F.3d at 262-66 (reversing trial court’s ruling that plaintiff could establish causation only by showing a “dose/response relationship” between exposure levels and risk of disease and finding that an expert need not possess specific dosage information in order to testify about causation in an FELA case); *Harbin v. Burlington N. R.R. Co.*, 921 F.2d 129, 132 (7th Cir. 1990) (finding a plaintiff need not identify the specific composition and density of soot present in his work environment to survive a summary judgment—although “expert testimony documenting the hazards posed by the presence of so many parts per million of soot in

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<sup>5</sup> Cases involving toxic torts that arise under general negligence principles, however, apply a stricter standard—a plaintiff must produce “at a minimum . . . evidence from which the factfinder can conclude that the plaintiff was exposed to levels of [the toxic agent at issue] that are known to cause the kind of harm that the plaintiff claims to have suffered.” *Mattis v. Carlon Elec. Prods.*, 295 F.3d 856, 860 (8th Cir. 2002) (addressing causation in the context ordinary negligence and a proximate cause standard). To prove causation in a toxic tort case, a plaintiff must show both that the alleged toxin is capable of causing injuries like that suffered by the plaintiff in persons subjected to the same level of exposure as the plaintiff, and that the toxin was the cause of the plaintiff’s injury. *Wright v. Willamette Indus.*, 91 F.3d 1105, 1106 (8th Cir. 1996) (under Arkansas law, applying a proximate cause standard that required evidence from which a reasonable person could conclude that a defendant’s emission had *probably caused* harm in order to recover). However, even under common-law negligence standards, a plaintiff does not need to produce a “mathematically precise table equating levels of exposure with levels of harm” to show that he was exposed to a toxic level of a chemical, but must only present “evidence from which a reasonable person could conclude that his exposure *probably caused* his injuries.” *Bonner*, 259 F.3d at 928 (emphasis added). “[W]hile precise information concerning the exposure necessary to cause specific harm to humans and exact details pertaining to the plaintiff’s exposure are beneficial, [it must be recognized that] such evidence is not always available, or necessary, . . . and need not invariably provide the basis for an expert’s opinion on causation.” *Westberry v. Gislaved Gummi AB*, 178 F.3d 257, 264 (4th Cir. 1999) (involving a strict liability, breach of warranty, and negligence action).

the air would certainly enhance [the plaintiff's] case, it is not essential under the regime of the [FELA]."); *Higgins v. Consol. Rail Corp.*, No. 1:06-CV-689 GLS/DRH, 2008 WL 5054224, at \*4 (N.D.N.Y. Nov. 21, 2008) (finding an issue of fact on causation even in the absence of expert testimony, and stating that, and stating that, due to the slight burden of proof in FELA actions, a jury may make inferences in an FELA case that it otherwise could not); *Sunnycalb v. CSX Transp., Inc.*, 926 F. Supp. 2d 988, 995-96 (S.D. Ohio 2013) (finding that the plaintiff's inability to establish a precise level of chemical exposure did not bar recovery under FELA—the evidence was sufficient for the jury to draw the reasonable inference that CSX's negligence played a part in plaintiff's injuries); *Payne v. CSX Transp., Inc.*, 467 S.W.3d 413, 457 (Tenn. 2015) ("[S]tated simply, the Plaintiff's experts were not required to establish 'a dose exposure above a certain amount' before they could testify about causation."); and *Russell v. Ill. Cent. R.R.*, No. W2013-02453-COA-R3-CV, 2015 WL 4039982, \*2-\*5 (Tenn. Ct. App. 2015) (rejecting defendant railroad's contention that an expert's opinions were not reliable because the differential diagnoses on which they were based "did not consider the dose, frequency or duration" of the plaintiff's exposure to carcinogens at work).

#### IV. DISCUSSION

The Court first finds the Railroad's motions to exclude the testimony of Dr. Chiodo and Dr. Vance should be denied. Both experts are clearly qualified to render their opinions and their opinions are relevant and reliable enough to pass muster under Rule 702 and *Daubert*.

The Court rejects the defendant's contention that Dr. Chiodo's testimony is not supported by scientific literature or a reliable methodology. Dr. Chiodo testified that he

relied on the plaintiff's descriptions of his employment in the context of peer-reviewed studies of exposure involving railroad workers and similar occupations. He based his testimony on an interview with the plaintiff, who described his work and his exposures, review of certain pleadings, review of the plaintiff's medical records, and on his own extensive knowledge, experience, and expertise in the field of industrial hygiene. He testified that there was no safe threshold of exposure to the carcinogens.

He performed a differential diagnosis or etiology based on the plaintiff's statements, corroborated by a review of the scientific literature. The differential diagnosis is a tested methodology that has been subjected to peer review/publication, has been shown not to frequently lead to incorrect results, and is accepted in the medical community. His finding that King had a "long and intense" exposure to agents known to cause multiple myeloma including diesel exhaust, herbicides, creosote, and formaldehyde during sixteen years of railroad employment has an adequate factual basis. He properly extrapolated his opinion from the facts and scientific literature.

He testified to a reasonable degree of medical certainty that King's exposure to benzene in diesel exhaust, herbicides, and creosote during the sixteen years the plaintiff worked for the Railroad contributed to his multiple myeloma. Notably, Dr. Chiodo, who is also an attorney, testified that in an FELA case, he is not required to determine which of several potential causes was most likely to cause the plaintiff's multiple myeloma, characterizing that determination as a matter for resolution by a judge or jury. The Court agrees and finds his testimony is sufficient with respect to specific and general causation.

Dr. Vance's testimony is similarly sufficient to withstand a *Daubert* challenge. The defendant's criticisms go to the weight, rather than the admissibility of his testimony. Dr. Vance interviewed the plaintiff and conducted a literature review. His methodology was reasonable in light of his familiarity with industrial hygiene standards. He has the qualifications and expertise to express an opinion on King's working conditions and the standard of care.

Both experts' testimony will assist the trier of fact in determining the railroad's potential liability in light of the requisite causation standard. The opinion testimony is relevant and reliable to show that U.P.'s allegedly negligent conduct in exposing King to toxins over sixteen years of employment played a part in causing King's cancer. The lack of quantitative data is not fatal to the admissibility of the experts' opinions since the lack of such data is typical in epidemiological cases. Any shortcomings in the experts' evaluations are properly the subject of cross-examination and do not call for exclusion of the testimony.

U.P. mistakenly relies on caselaw involving toxic tort actions, without recognizing that this case is a toxic tort case under the FELA. The defendant's position would have more force if the case required a showing of proximate cause. If the plaintiff had to prove the exposure proximately caused the injury, the experts' testimony would be less relevant and would not necessarily be sufficiently tied to the facts of the case to assist the jury. Under the FELA, however, the plaintiff need not demonstrate the railroad's conduct was the proximate cause, but only that it played a part—no matter how small—in the injury.

The Court finds the experts' opinions are tied to the facts of the case and are supported by accepted scientific theories. The record shows the experts based their opinions on medical records, peer-reviewed studies, and evidence of exposures that covered a long period of time. They also relied on their education and experience in the fields of statistics, toxicology, and industrial hygiene. The defendant's criticisms go to the weight, rather than the admissibility of the testimony.

Moreover, the Court finds the defendant's reliance on the exclusion of Dr. Chiodo's testimony in other cases in this district is unavailing. See *Harder v. Union Pac. R.R. Co.*, No. 8:18CV58, 2020 WL 469880, at \*1 (D. Neb. Jan. 29, 2020) (excluding Dr. Chiodo's testimony because he was unaware of the plaintiff's length of exposure, concentration of exposure, and the atmosphere of exposure), *appeal docketed*, No. 20-1417 (8th Cir. Mar. 2, 2020); *West v. Union Pac. R.R. Co.*, No. 8:17CV36, 2020 WL 531994, at \*5 (D. Neb. Feb. 3, 2020) (excluding the causation testimony of Dr. Chiodo as speculation based only on the job the plaintiff held, without reliance on the testimony of an industrial hygiene expert or other facts or data), *appeal docketed*, No. 20-1422 (8th Cir. Mar. 4, 2020). This Court is not bound by those decisions, they involved different facts and evidence, and they have been appealed.<sup>6</sup> Also, Dr. Chiodo's opinion has been admitted in another case in this district and in an FELA case in another

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<sup>6</sup> Other similar cases in this district involved different experts, different diseases, different jobs, and different considerations relevant to the differential etiology analysis. See e.g., *Byrd v. Union Pac. R.R. Co.*, No. 8:18CV36, 2020 WL 1848496, at \*6 (D. Neb. Apr. 13, 2020) (excluding expert testimony on liability for failure to link the plaintiff's exposure to the plaintiff's lung cancer and COPD without knowing exposure levels and failing to adequately rule out the plaintiff's two-pack-a-day, forty-year, smoking history as the sole cause of the lung cancer), *appeal docketed*, No. 20-1959 (8th Cir. May 12, 2020); *McLaughlin v. BNSF Ry. Co.*, No. 4:18-CV-3047, 2020 WL 641729, at \*6 (D. Neb. Feb. 11, 2020) (expert causation testimony excluded because the expert failed to adequately rule out thirty-year, pack-and-a-half-a-day cigarette smoking as the sole cause of the plaintiff's lung cancer), *appeal docketed*, No. 20-1494 (8th Cir. Mar. 10, 2020). Those cases have also been appealed. See *id.*

jurisdiction. See *Ranney v. Union Pacific Railroad Co.*, No. 8:18cv59, Filing No. \_\_ (D. Neb. June \_\_, 2020); [Filing No. 42-1](#), Ex. 4, *Minic v. BNSF Ry. Co.*, No.18-01931, Filing No. 45, Courtroom Minutes (D. Colo. Feb. 26, 2020).

#### V. CONCLUSION

In conclusion, the Court's review of the record shows that the scientific testimony at issue rests on "appropriate validation—i.e., 'good grounds', based on what is known," *Daubert*, 509 U.S. 590, and "should be tested by the adversary process with competing expert testimony and cross-examination, rather than excluded by the court at the outset." *Johnson*, 754 F.3d at 562. The experts' opinion are not so "fundamentally unsupported that [the testimony] can offer no assistance to the jury." *Bonner*, 259 F.3d at 929–30.

The Court finds the methodology employed by the plaintiff's experts is scientifically valid, can properly be applied to the facts of this case, and is reliable enough to assist the trier of fact. This is not the sort of junk science that *Daubert* addresses.

With the admission of the expert testimony, there is an issue of fact for the jury on the exposures and whether the exposures contributed to the plaintiff's multiple myeloma. U.P. has not shown as a matter of law that the plaintiff cannot prevail in establishing that U.P.'s negligence "played a part" in King's cancer. Accordingly, the Court finds the defendant's motion for summary judgment should also be denied.

#### IT IS ORDERED:

1. The defendant's motions in limine (Filing Nos. 32 and 34) are denied.

2. The defendant's motion for summary judgment ([Filing No. 36](#)) is denied.

Dated this 5th day of June, 2020.

BY THE COURT:

s/ Joseph F. Bataillon  
Senior United States District Judge